

PATENT

Atty Docket No.: 10005208-1

App. Ser. No.: 09/891,325

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Claim 1 has been amended. Claim 13 has been added. Therefore, claims 1-13 are currently pending in the present application, of which claims 1 and 8 are independent.

Claims 1-7 and 9-12 were rejection under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

Claims 1, 2, 4-5, and 7 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by White, Jr. et al. (U.S. Patent Number 6,130,102).

Claims 3, 6, and 8-11 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over White, Jr. et al. in view of Early (U.S. Patent Number 6,094,335).

The above rejections are respectfully traversed for at least the reasons set forth below.

Telephonic Interviews Conducted

The undersigned thanks Examiner Luu for the courtesies extended in the multiple telephonic discussions regarding the application. The undersigned also thanks Examiner Luu for indicating, in the telephonic discussion on December 5, 2006, that White Jr. et al. does not disclose the claimed invention and that the finality of the Office Action dated September 7, 2006 will be withdrawn upon the filing of this response (as memorialized in the Interview Summary dated December 6, 2006).

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Claim Rejection Under 35 U.S.C. §112, First Paragraph

Claims 1-7 and 9-12 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, it was alleged that the previously added features of a "second dielectric layer ..." is not supported or described in the specification. As explained to and agreed by the Examiner in the telephonic discussion dated December 5, 2006, there is full support of the claimed second dielectric layer in the originally-filed disclosure. For example, in one embodiment, there is a second dielectric layer 335 in FIGs. 3D-E arranged as claimed and described in at least ll. 18+, p. 9 of the originally-filed specification. Also, the specification provides for various embodiments, one of which includes the second dielectric layer 335 being made of silicon dioxide (dielectric K=3.9) and the first dielectric layer 330 being made of silicon nitride (dielectric K=7.5).

Accordingly, withdrawal of the rejection of Claims 1-7 and 9-12 under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Claim Rejection Under 35 U.S.C. §102(b)

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

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Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1, 2, 4-5, and 7 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by White, Jr. et al. (U.S. Patent Number 6,130,102).

As explained to and agreed by the Examiner in the telephonic discussion dated December 5, 2006, White Jr., et al. does not teach "a first dielectric layer deposited *on an interface* of said first electrode, the first dielectric layer having a first dielectric constant," as stated in Claim 1 (Emphasis added). Indeed, in FIG. 1 of White, Jr. et al., the alleged first dielectric layer 218 is not in contact with the alleged first electrode 214 at all. Therefore, the layer 218 could not be deposited *on an interface* of the electrode/plug 214. Claim 1 further recites a second electrode and a second dielectric layer formed or deposited on *the same interface* of the first dielectric layer. In contrast, in White, Jr. et al., any possibly-alleged second dielectric layer (215 or 216) and the alleged second electrode 220 could not be formed on *the same interface* of the alleged first dielectric layer 218, as clearly illustrated in FIG. 1 of White, Jr. et al. Claim 1 has been amended to further focus on the aforementioned features.

Accordingly, the Examiner has indicated that White, Jr. et al. is no longer a valid reference for a rejection under 35 U.S.C. § 102, and the finality of the previous Office Action is vacated. Therefore, it is respectfully submitted that Claims 1-7 are allowable over the references of record.

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Claim Rejection Under 35 U.S.C. §103(u)

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. §103 is set forth in MPEP §706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

Claims 3, 6, and 8-11 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over White, Jr. et al. in view of Early (U.S. Patent Number 6,094,335).

Independent Claim 8

Claim 8 recites that the "substantially thin dielectric layer comprises a composite of materials that includes PZT and platinum." White, Jr. et al. merely teaches the use of platinum for the alleged first electrode/plug 214 and not for a dielectric layer. Furthermore, Early makes no mention of either PZT or platinum, much less the use of a composite material that includes such specific materials to form a dielectric layer.

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Because White, Jr. et al. and Early together do not disclose all elements as arranged in Claim 8, it is respectfully submitted that the Examiner has not established a *prima facie* case of obviousness against Claim 8. Accordingly, withdrawal of the rejection of Claims 8-12 and their allowance are respectfully requested.

Claims 3, 6, and 8-11

It is respectfully submitted that, for at least the reasons set forth earlier, Claims 3, 6, and 8-11 are neither anticipated nor made obvious by White, Jr. et al. and Early. Furthermore, it is respectfully submitted that White, Jr. et al. and Early cannot be combined to show the various arrangements of the on-chip capacitor as recited in Claims 3, 6, and 8-11 because such a combination does not work. Specifically, White, Jr. et al. is directed to the formation of a semiconductor device with its various layers *horizontally* arranged to form any alleged capacitor. In contrast, Early is directed to the formation of a *vertical* parallel plate capacitor. Thus, any techniques disclosed in Early for forming a vertical parallel plate would not be applicable to the formation of a horizontally-arranged capacitor in the semiconductor device of White, Jr. et al.

Because the Examiner fails to establish a *prima facie* case of obviousness against Claims 3, 6, and 8-11, withdrawal of the rejection of these claims and their allowance are respectfully requested.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

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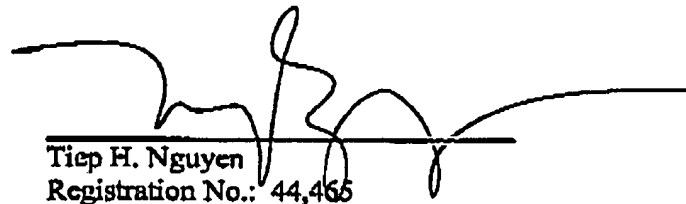
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Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

Dated: December 7, 2006

By


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